

SOME BAHAMA ORTHOPTERA

BY ALBERT P. MORSE, WELLESLEY, MASS.

In the summer of 1904 Dr. Glover M. Allen of the Boston Society of Natural History, and Messrs. Thomas Barbour and Owen Bryant of Harvard University spent several weeks in a zoölogical collecting trip to the northern Bahamas. The orthoptera secured, including some apparently undescribed species, form the subject of the present paper, in which are incorporated several notes by Dr. Allen on the habits of some of the species observed by him. This is the sixth of a series of short papers based on the material collected.

BLATTIDAE.

1. *Ischnoptera blattoides* Sauss. Mangrove Cay, Andros, O. Bryant.
2. *Eurycotis* sp. indet. Mangrove Cay, Andros, O. Bryant.
3. *Periplaneta americana* Linn. New Providence; Mangrove Cay, Andros, O. Bryant.
4. *Periplaneta australasiae* Fabr. New Providence; Mangrove Cay, Andros, O. Bryant.
5. *Rhyparobia maderae* Fabr. Exact locality not given.
6. *Pycnoscelus surinamensis* Linn. New Providence.
7. *Hemiblabea* sp. indet. Mangrove Cay, Andros, O. Bryant.

ACRIDIDAE.

8. *Orphulella olivacea* Morse. 1 ♂, Stranger Cay, July 14, G. M. Allen. "Fairly common back from the shore along the upper beach."
9. *Amblytropidia!* 1 juv., Nassau, June 28, G. M. Allen.
10. Tryxaline, indet. 1 juv., Nassau, June 28, G. M. Allen.
11. *Schistocerca americana* Drury. 2 ♂ 1 ♀, juv. 3, 5, Nassau, June 28, G. M. Allen; 1 ♂, Elbow Cay, July 3; 1 ♀, Mangrove Cay, Andros, Aug. 1 to 7, O. Bryant; 1 ♂, Stranger Cay, July 14, G. M. Allen.
"Common at Nassau in the gardens near the hotel. They were also very common at Stranger Cay, where on July 14 and 15 we saw numbers along the edge of the bushes on the upper part of the beach."
12. *Schistocerca* sp. 2, juv. 2, 4, Nassau, June 28, G. M. Allen; pale fulvous in color.
13. *Schistocerca* sp. 1, juv. 3, Nassau, June 28, G. M. Allen; 2, juv. 4, 5, Mangrove Cay, Andros, Aug. 4, O. Bryant; 1 juv. 2, Stranger Cay, July 14, G. M. Allen; color green or yellowish green.

14. *Paroxya dissimilis* sp. nov.

Resembling *P. atlantica* in size and appearance but differing markedly in form of male genitalia. The cerci are nearly three times as long as their basal width, slender, narrowing rapidly in their basal half to less than one-third their basal width, approximately equal in middle third, slightly dilated apically (chiefly on dorsal margin) the ventral margin straight except at base, the dorsal margin sinuous, the apex truncate, slightly more than half as wide as base, its dorsal angle rounded; the whole organ is moderately and regularly incurved, its apex flattened externally, convex internally, with revolute margins. Furcula similar to that of *atlantica* but shorter and the tips less pronounced.

Antenna: (estimated) ♂, 10, ♀, 8; body: ♂, 18.2, ♀, 20.5; hind fem.: ♂, 11.5, ♀, 13.7; tegmina: ♂, 14, ♀, 16 mm.

One ♂, one ♀, Mangrove Cay, Andros, Aug. 4, O. Bryant.

14 a. *Paroxya* sp. juv. 2, 4, 5. Stranger Cay, July 14, G. M. Allen.

Very likely identical with the preceding.

LOCUSTIDAE.

15. *Conocephalus nietoi* Sauss. 1 ♀, juv. 4. Nassau, June 28, G. M. Allen.16. *Conocephalus* sp. 4 specimens, juv. 1, 2, Nassau, June 28, G. M. Allen; vertex acuminate.17. *Xiphidium fasciatum* DeG. 1 ♂, 1 ♀, Nassau, June 28, G. M. Allen. In the ♂ the wings barely pass the hind knees, in the ♀ they extend 6mm. beyond them. Mr. Allen states that the green grasshoppers taken at Nassau "were collected among the grass on the estate of Mr. Robert Johnstone. Most of the grass in the Bahamas is confined to such places as have been cleared and cultivated."18. *Xiphidium insulare* sp. nov.

This is a slender species related to *X. gracillimum* but with the vertex wider (at least one-third the distance between the eyes), and less produced (five-sixths the length of eye viewed from above), the hind femora proportionally shorter, and the lateral lobes of the pronotum distinctly polygonal in outline instead of triangular.

Body: 11; tegmina: 15; wings: 18; hind femora: 10; total length (vertex to end of wings): 22 mm.

1 ♂, Stranger Cay, July 14, G. M. Allen.

Three additional specimens of this genus in early stages were secured, two at Nassau, and one on Mangrove Cay.

GRYLLIDAE.

19. *Mogisoplistus barbouri* sp. nov.

A larger and stouter species than *slossoni* of Florida, with the auditory foramina elliptic, twice as long as wide (in *slossoni* circular). Pronotum quadrate, narrowed anteriorly, strongly convex transversely, the front and hind margins truncate, the sides barely convex. Hind femora stout, about two-fifths as wide as long. Body and legs clothed with white scales. Hind legs with lower margin of femora, edge of tibiae, and sides of metatarsus with delicate white or brownish pile, the under side of the metatarsus and its spurs covered with a dense brush of brown pile. Anterior and middle legs pilose, and with numerous additional long, slender, scattered hairs, attaining a length on the femur of half its diameter, on the tibia equalling its diameter. Ovipositor rather stout, barely lanceolate at tip.

Body: 10; hind fem.: 2.3x6; hind tib.: 4.5; ovipositor: 5; antenna: 13 +; pronotum: ant. margin, 1.8, post. margin, 2.7, length, 2.4 mm.

One ♀, Nassau, July, T. Barbour.

20. *Cycloptilus americanus* Sauss. 1 ♂, 1 ♀, Nassau, G. M. Allen.21. *Nemobius* sp. 1 juv. ♂, Nassau, June 28, G. M. Allen.22. *Nemobius alleni* sp. nov.

Body short, stout, somewhat depressed; antennae extremely slender, two and a half to three times as long as the body. Beneath brown; above, fuscous, finely maculate with brown. Hind femora with three transverse fuscous fasciae on apical three-fifths, at base brown with numerous narrow, oblique fuscous stripes. Bristles of head, pronotum and legs black; pubescence of body, legs and cerci brown.

Spines of hind tibiae three in number on each side, forming a graduated series with the longest apical spur (which equals the metatarsus) and densely pubescent, the hairs on the ventral side extremely long. Auditory foramina of male linear, of female lanceolate, the apex distal. Tegmina of male covering two-thirds of abdomen, nearly as wide as long, black, indistinctly varied with brown; truncate, the speculum and apical area aborted. Female completely apterous. Ovipositor moderately stout, compressed, gently but distinctly arcuate, shorter than hind femora, the tip slightly lanceolate, minutely denticulate on its dorsal margin; cerci equalling ovipositor, slender, villose, the hairs at base one-third as long as cercus.

Body: ♂, 5 to 6; ♀, 6; hind fem.: ♂, 4.5; ♀, 5; ovipositor: 4; antenna: ♂, ♀, (estimated) 15 mm.

Two ♂, 2 ♀, Moraine Cay, July 13, G. M. Allen. 4 ♂ and 3 ♀ nymphs in the fourth and fifth stages were also secured.

This interesting little cricket, which was collected by Dr. Allen, for whom I take pleasure in naming it, was "found abundantly along the edge of a mangrove swamp that extended for some distance out from the shore. On approaching this swamp from the landward side my attention was attracted by a faint but continuous cricket-like note which seemed to come from all about me. After a careful search among the black roots of the mangroves and the water-soaked leaves at their bases, I found numbers of the little insects. They were extremely quick and agile, and although it was easy enough to see them as they leaped aside at my approach, they immediately became invisible on alighting, so closely did they harmonize in color with the dark sticks and leaves. In this thick undergrowth the use of a net was practically out of the question, even if I could have been quick enough to sweep up the active little creatures. I found, however, that I could easily drive two or three at a time on to a sheet of newspaper that I spread on the sodden surface of the swamp, and with a slow but steady motion a wide-mouthed bottle could be brought above a resting insect and clapped over him before he could escape."

23. *Gryllus bryanti* sp. nov. With the general facies of *G. firmus*. *

Head black with faint brownish markings. Pronotum one and a half times as wide as long, black, with narrow, irregular, poorly defined, yellowish-brown markings along the posterior half of the lateral carinæ, anterior half of median line, and anterior and posterior margins. Tegmina black, the veins and venules of the lateral field luteous, entirely covering body, reaching hind knees. Wings fully developed, extending nearly to the end of the hind tibiae. Legs brownish fuscous, the hind tibiae with 6 or 7 spines on each side, not widely divaricated; the upper and middle calcaria of equal length, less than one-half the metatarsus (in *firmus* one-half to three-fifths), the longest metatarsal spur reaching less than half way down the last tarsal joint (in *firmus* extending one-half or two-thirds its length.) Ovipositor slender, shorter than body, about one and one quarter times as long as the hind femora.

Body: 22; pronotum: length, 4, width, 6; tegmina: 16; wings: 26; hind fem.: 14; ovipositor: 18 mm.

One ♀, Mangrove Cay, Andros, Aug. 4, O. Bryant.

24. *Cyrtoxipha* sp. indet. One ♀, badly damaged, Nassau, G. M. Allen.
 25. *Amphiacustes annulipes* Serv. 1 juv. ♂, Nassau, June 28, G. M. Allen.
 26. ***Amphiacustes bahamensis* sp. nov.**

Related to *annulipes* and *fuscicornis*. Antennæ of great length and extreme tenuity, seven to eight times as long as the body in the male. Vertex strongly depressed at the level of the middle of the eyes. Pronotum once and a half (♀) or twice (♂) as wide as long, its lateral lobes with the ventral margins strongly oblique, the angles broadly rounded. Female apterous. Tegmina of male covering two-thirds to five-sixths of the abdomen, reddish brown, the veins pale yellow; speculum symmetrical, equaling one-third of a circle, arcuate behind, obtuse-angulate (120°) in front, crossed by two dividing venules, the posterior arising midway of the posterior border and curving forward to join it again near the external angle, the anterior arising a little nearer the internal angle than the origin of the first and crossing the speculum by a course at first straight and then for a short distance arcuate to strike the external border at or just behind the external angle. Post-anal vein angulate in the middle, and sending a venule from the angle to the anterior angle of the speculum with whose antero-external border it is continuous save for an almost imperceptible truncation due to the junction of the diagonal vein. Oblique veins 3 or 4, the first two sinuous.

Supra-anal plate of male truncate, its lateral margins sinuate, somewhat revolute, sometimes prolonged at the posterior angles into projecting, vertically placed, flattened processes.

Body dark reddish brown above, pale brown or luteous beneath. Anterior and posterior margins of pronotum and a line behind posterior margin of eyes pale yellow; a transverse poorly defined band on the vertex and another on the anterior third of the pronotum yellowish brown. Legs longer and a little slenderer than in *annulipes*, pale brown and luteous, the hind thighs rusty at base and fuscous along ventral sulcus; the fore and middle thighs not annulate with fuscous as in *annulipes* but all joints sometimes sparsely marked apically with dark brown.

Antennæ: ♂, 115-120; body: ♂, ♀, 16.5-17; pronotum: ♂, 3x5.5-6, ♀, 4x6; tegmina: ♂, 6x8.5; ant. fem.: ♂, 10-11, ♀, 10.5; middle fem.: ♂, 11-12, ♀, 11; post. fem.: ♂, 20-23, ♀, 21; post tibiæ: ♂, 21-25, ♀, 23; ovipositor: 16mm.

Three ♂, one ♀, Mangrove Cay, Andros, Aug. 4, O. Bryant. Three ♀ nymphs in the fifth stage and one in the first were also secured.

Dr. Allen writes concerning the crickets of this genus that they "were on several occasions found in numbers just within the entrance of some rather open caves in the limestone rock both at New Providence and on the Abacos. They were crawling about on the roofs of the caves and seemed to avoid the floor. Mr. Barbour caught two or three at Nassau about some large trees towards evening. The note of these crickets is a rasping 'scre-e-e-p' with an upward inflection."